

Search Plan and Results

Question

[What is the relationship between eating frequency and nutrient intake? \(DGAC 2010\)](#)

Date Searched

11-18-09

Inclusion Criteria

Subjects/Population: Human subjects.

Age: Children, men and women of all ages.

Setting: International.

Health Status: Healthy and those with elevated chronic disease risk (CHD/CVD, type 2 diabetes, metabolic syndrome and obesity).

Nutrition Related Problem/Condition: None.

Search Criteria

Study Design Preferences: Randomized controlled trial (RCT) or clinical controlled studies, large non-randomized observational studies, cohort, case-control studies, systematic reviews and meta-analysis.

Size of Study Groups: The sample size must equal 10 adults for each study group. For example, this would include 10 patients in the intervention group and 10 patients in the control or comparison group.

Study Dropout Rate: Less than 20%; preference for smaller dropout rates.

Year Range: June 2004 to November 2009.

Authorship: If an author is included on more than one review article or primary research article that is similar in content, the most recent review or article will be accepted and earlier versions will be rejected.

Languages: Limited to articles in English.

Other: Article must be published in peer-reviewed journal.

Exclusion Criteria

Subjects/Population:

- Animal and in vitro studies
- Malnourished/developing populations or disease incidence not relative to US population (e.g., malaria).

Setting: Hospitalized patients.

Health Status: Medical treatment/therapy and diseased subjects.

Nutrition Related Problem/Condition: All conditions.

Search Criteria

Study Design Preferences: Not applicable.

Size of study groups: Sample sizes <10.

Study Dropout rate: If the dropout rate in a study is 20% or greater, the study will be rejected.

Year Range: Prior to June 2004.

Authorship: Studies by same author similar in content.

Languages: Articles not in English.

Other: Abstracts or presentations and articles not peer reviewed (websites, magazine articles, Federal reports, etc.).

Search Terms: Search Vocabulary

("meal frequency" OR "eating frequency" OR "meal times" OR "meal timing" OR "lunch frequency" OR "dinner frequency" OR (eating occasion*)) AND ("Nutritional Status"[mh] OR "nutritional requirements"[mh] OR "Nutritive Value"[mh] OR "nutrient adequacy" OR (nutrient intake*) OR "nutrient density" OR "diet quality" OR "nutrition assessment"[mh]) Limits: Humans, English

Electronic Databases

Total hits from all electronic database searches: 169

Total articles identified to review from electronic databases: 24

Articles Identified Via Handsearch or Other Means

Hand-search: 1

Summary of Articles Identified to Review

Number of Primary Articles Identified: 2

Number of Review Articles Identified: 0

Total Number of Articles Identified: 3

Number of Articles Reviewed but Excluded: 22

List of Articles Included for Evidence Analysis

Kerver JM, Yang EJ, Obayashi S, Bianchi L, Song WO. [Meal and snack patterns are associated with dietary intake of energy and nutrients in US adults.](#) *J Am Diet Assoc.* 2006 Jan; 106 (1): 46-53. PMID: 16390666.

Macdiarmid J, Loe J, Craig LC, Masson LF, Holmes B, McNeill G. [Meal and snacking patterns of school-aged children in Scotland.](#) *Eur J Clin Nutr.* 2009 Nov; 63 (11): 1, 297-1, 304. Epub 2009 Aug 26. PMID: 19707230.

Storey KE, Hanning RM, Lambraki IA, Driezen P, Fraser SN, McCargar LJ. [Determinants of diet quality among Canadian adolescents.](#) *Can J Diet Pract Res.* 2009 Summer; 70 (2): 58-65. PMID: 19515268.

List of Excluded Articles with Reason

Excluded Articles	Reason for Exclusion
Bridge A, Kipp W, Raine K, Konde-Lule J. Nutritional status and food consumption patterns of young children living in Western Uganda. <i>East Afr Med J.</i> 2006 Nov; 83 (11): 619-625. PMID: 17455451.	Does not answer the question. Study done in Uganda.
Buijzen M, Schuurman J, Bomhof E. Associations between children's television advertising exposure and their food consumption patterns: A household diary-survey study. <i>Appetite.</i> 2008 Mar-May; 50 (2-3): 231-239. Epub 2007 Jul 25. PMID: 17804119.	Does not answer the question. Exposure to food advertising and food consumption.
Burgess-Champoux TL, Larson N, Neumark-Sztainer D, Hannan PJ, Story M. Are family meal patterns associated with overall diet quality during the transition from early to middle adolescence? <i>J Nutr Educ Behav.</i> 2009 Mar-Apr; 41 (2): 79-86. PMID: 19304252.	Does not answer the question. Family meal patterns.
Cluskey M, Edlefsen M, Olson B, Reicks M, Auld G, Bock MA, Boushey CJ, Bruhn C, Goldberg D, Misner S, Wang C, Zaghloul S. At-home and away-from-home eating patterns influencing preadolescents' intake of calcium-rich food as perceived by Asian, Hispanic and	Does not answer the question. Eating patterns at home and away-from-home.

<p><u>Non-Hispanic white parents.</u> <i>J Nutr Educ Behav.</i> 2008 Mar-Apr; 40 (2): 72-79. PMID: 18314082.</p>	
<p>Demory-Luce D, Morales M, Nicklas T, Baranowski T, Zakeri I, Berenson G. <u>Changes in food group consumption patterns from childhood to young adulthood: The Bogalusa Heart Study.</u> <i>J Am Diet Assoc.</i> 2004 Nov; 104 (11): 1, 684-1, 691. PMID: 15499355.</p>	<p>Does not answer the question. About changes in consumption patterns.</p>
<p>Feldman S, Eisenberg ME, Neumark-Sztainer D, Story M. <u>Associations between watching TV during family meals and dietary intake among adolescents.</u> <i>J Nutr Educ Behav.</i> 2007 Sep-Oct; 39 (5): 257-263. PMID: 17826345.</p>	<p>Does not answer the question. Association of food intake and TV watching during family times.</p>
<p>Fox MK, Devaney B, Reidy K, Razafindrakoto C, Ziegler P. <u>Relationship between portion size and energy intake among infants and toddlers: Evidence of self-regulation.</u> <i>J Am Diet Assoc.</i> 2006 Jan; 106 (1 Suppl 1): S77-S83. PMID: 16376632.</p>	<p>Does not answer the question. Assess dietary intake of infants and toddlers.</p>
<p>Fox MK, Gordon A, Nogales R, Wilson A. <u>Availability and consumption of competitive foods in US public schools.</u> <i>J Am Diet Assoc.</i> 2009 Feb; 109 (2 Suppl): S57-S66. PMID: 19166673.</p>	<p>Does not answer the question. Availability of competitive foods.</p>
<p>Hanning RM, Woodruff SJ, Lambraki I, Jessup L, Driezen P, Murphy CC. <u>Nutrient intakes and food consumption patterns among Ontario students in grades six, seven and eight.</u> <i>Can J Public Health.</i> 2007 Jan-Feb; 98 (1): 12-16. PMID: 17278670.</p>	<p>Does not answer the question. About frequency of meals and weight.</p>
<p>Kant AK, Graubard BI. <u>Eating out in America, 1987-2000: Trends and nutritional correlates.</u> <i>Prev Med.</i> 2004 Feb; 38 (2): 243-249. PMID: 14715218.</p>	<p>Does not answer the question. Eating Out in America.</p>
<p>Kant AK, Graubard BI. <u>Secular trends in patterns of self-reported food consumption of adult Americans: NHANES 1971-1975 to NHANES 1999-2002.</u> <i>Am J Clin Nutr.</i> 2006 Nov; 84 (5): 1, 215-1, 223. PMID: 17093177.</p>	<p>Does not answer the question. Meals and snack consumption and food density.</p>
<p>Larson NI, Neumark-Sztainer D, Hannan PJ, Story M. <u>Family meals during adolescence are associated with higher diet quality and healthful meal patterns during young adulthood.</u> <i>J Am Diet Assoc.</i> 2007 Sep; 107 (9): 1, 502-1, 510. PMID: 17761227.</p>	<p>Does not answer the question. About family meals.</p>

<p>Maddah M, Rashidi A, Mohammadpour B, Vafa R, Karandish M. In-school snacking, breakfast consumption, and sleeping patterns of normal and overweight Iranian high school girls: A study in urban and rural areas in Guilan, Iran. <i>J Nutr Educ Behav</i>. 2009 Jan-Feb; 41 (1): 27-31. PMID: 19161917.</p>	<p>Does not answer the question. Skipping breakfast and obesity in Iran.</p>
<p>Moffat T, Galloway T. Food consumption patterns in elementary school children. <i>Can J Diet Pract Res</i>. 2008 Fall; 69 (3): 152-154. PMID: 18783641.</p>	<p>Does not answer the question. Description of food patterns.</p>
<p>Mota J, Fidalgo F, Silva R, Ribeiro JC, Santos R, Carvalho J, Santos MP. Relationships between physical activity, obesity and meal frequency in adolescents. <i>Ann Hum Biol</i>. 2008 Jan-Feb; 35 (1): 1-10. PMID: 18274921.</p>	<p>Does not answer the question. About obesity.</p>
<p>Piammongkol S, Marks GC, Williams G, Chongsuvivatwong V. Food and nutrient consumption patterns in third trimester Thai-Muslim pregnant women in rural southern Thailand. <i>Asia Pac J Clin Nutr</i>. 2004; 13 (3): 236-241. PMID: 15331334.</p>	<p>Does not answer the question. About food intake and socio-economic factors.</p>
<p>Pobocik RS, Trager A, Monson LM. Dietary patterns and food choices of a population sample of adults on Guam. <i>Asia Pac J Clin Nutr</i>. 2008; 17 (1): 94-100. PMID: 18364333.</p>	<p>Does not answer the question. Describe dietary patterns of adults in Guam.</p>
<p>Prochnik Estima Cde C, da Costa RS, Sichieri R, Pereira RA, da Veiga GV. Meal consumption patterns and anthropometric measurements in adolescents from a low socioeconomic neighborhood in the metropolitan area of Rio de Janeiro, Brazil. <i>Appetite</i>. 2009 Jun; 52 (3): 735-739. Epub 2009 Apr 5. PMID: 19501773.</p>	<p>Does not answer the question. About obesity.</p>
<p>Schunk JM, McArthur LH, Maahs-Fladung CA. Correlates for healthful snacking among middle-income midwestern women. <i>J Nutr Educ Behav</i>. 2009 Jul-Aug; 41 (4): 274-280. PMID: 19508933.</p>	<p>Does not answer the question. Measure snack quality.</p>
<p>Thang NM, Popkin BM. Patterns of food consumption in Vietnam: Effects on socioeconomic groups during an era of economic growth. <i>Eur J Clin Nutr</i>. 2004 Jan; 58 (1): 145-153. PMID: 14679380.</p>	<p>Does not answer the question. Inequalities on diets in Vietnam.</p>
<p>Vågstrand K, Barkeling B, Forslund HB, Elfag K, Linné Y, Rössner S, Lindroos AK. Eating habits in relation to body fatness and gender in adolescents-results from the 'SWEDES' study. <i>Eur J Clin Nutr</i>. 2007 Apr; 61 (4): 517-525. Epub 2006 Sep</p>	<p>Does not answer the question. Eating habits and body fat (Included breakfast).</p>

27. PMID: 17006444.		
Woodruff SJ, Hanning RM. <u>Associations between family dinner frequency and specific food behaviors among grade six, seven, and eight students from Ontario and Nova Scotia.</u> <i>J Adolesc Health.</i> 2009 May; 44 (5): 431-436. Epub 2009 Jan 9. PMID: 19380089.	Does not answer the question. Family meals frequency.	